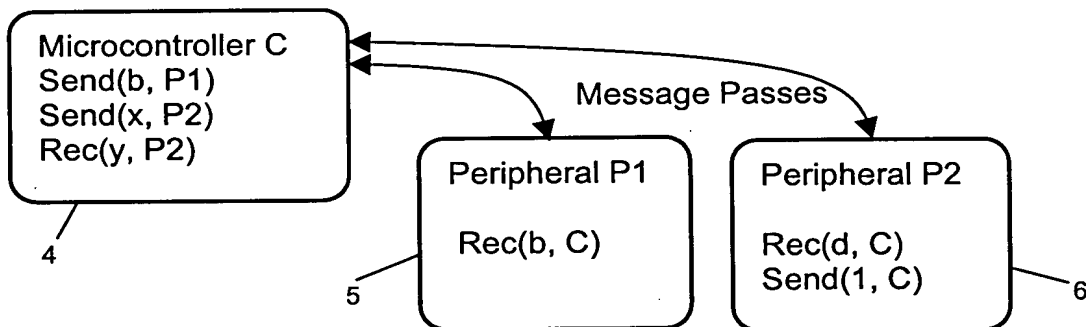
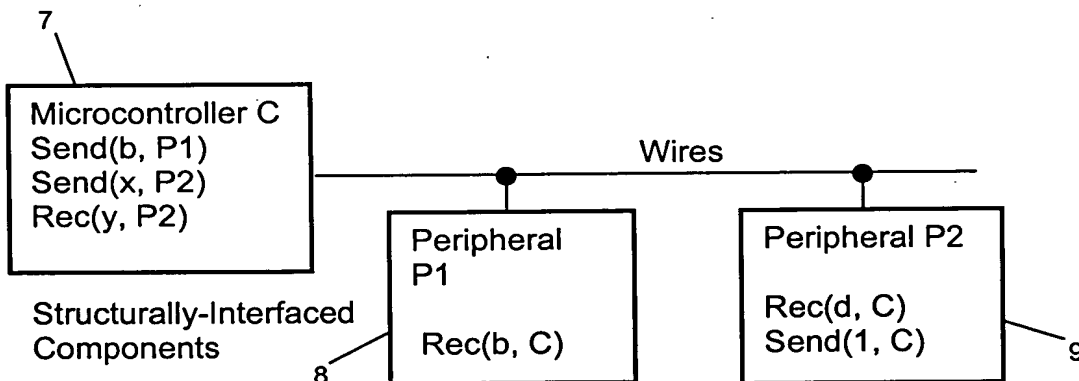


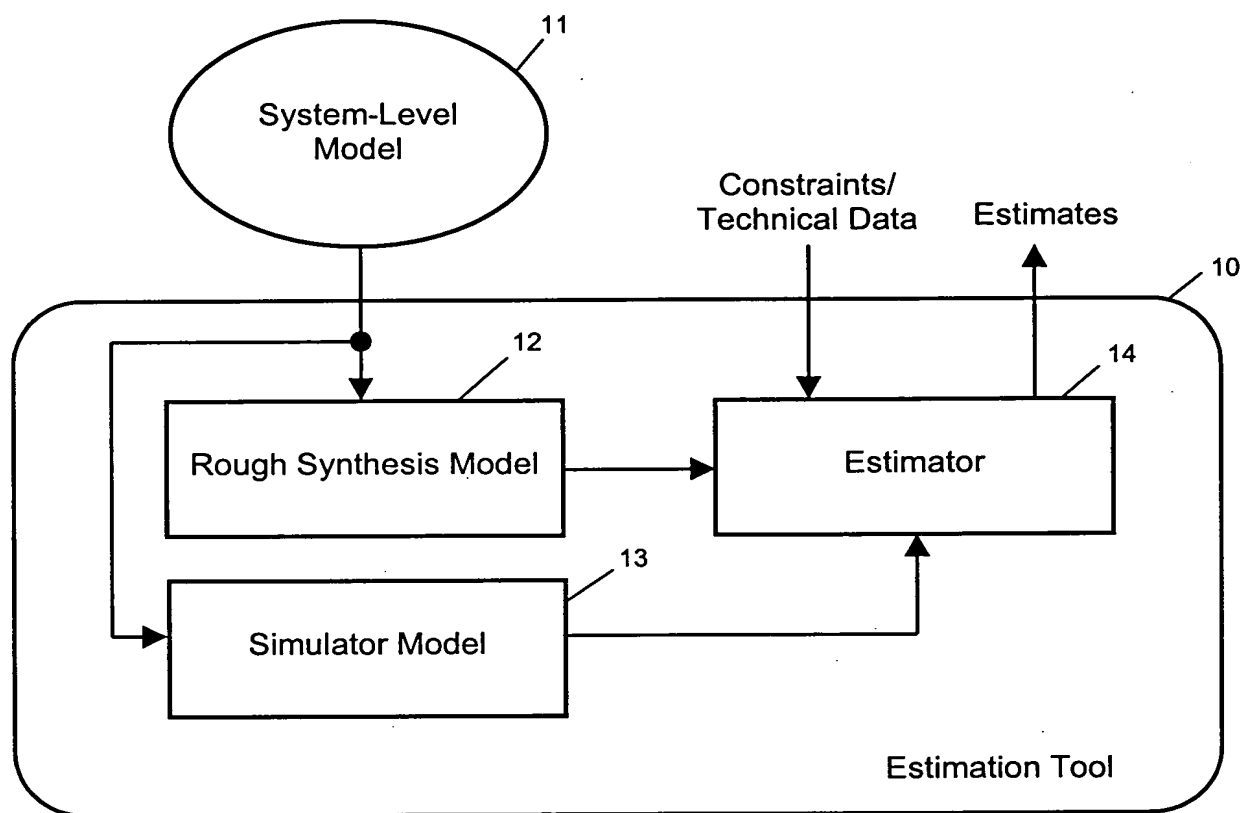
**FIG. 1A**  
**PRIOR ART**



**FIG. 1B**  
**PRIOR ART**



**FIG. 1C**  
**PRIOR ART**



**FIG. 2**  
**PRIOR ART**

Buffer Size (bytes)	Area (transistors)	Toggle-Count
2	4552	203
4	7360	232
8	1576	238
16	22600	249

FIG. 3

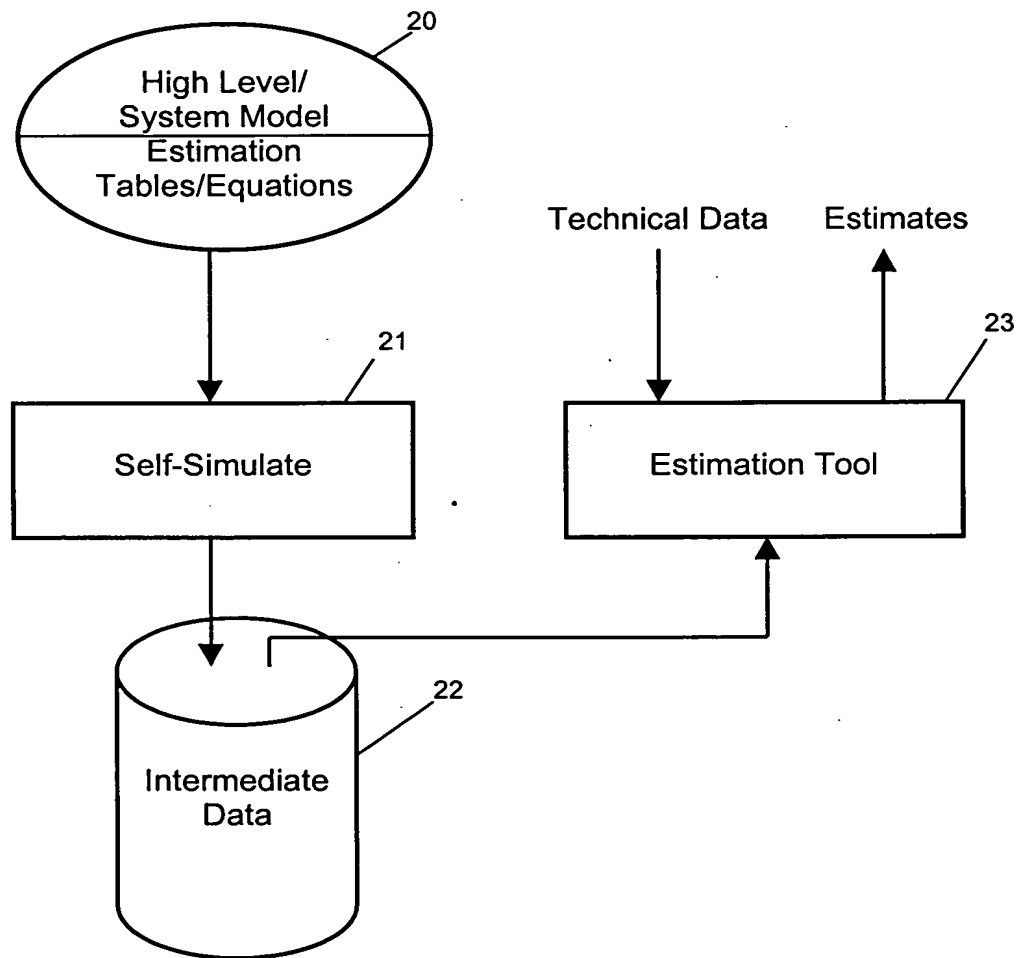
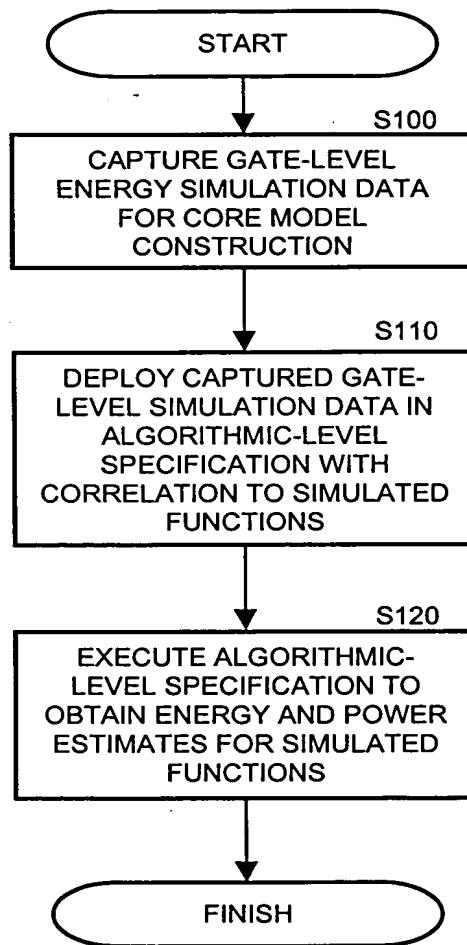


FIG. 4

```
class UART {  
    unsigned toggle_count = 0;  
    public Reset() {  
        data_txbuf = 0, data_rxbuf = 0;  
        toggle_count += TOGGLE_TABLE[RESET];  
    }  
    public EnableTx() {  
        for( int i = 0; i < 8; i++ )  
            s_out = (data_txbuf >> i) & 0x01;  
        toggle_count += TOGGLE_TABLE[ENABLETX];  
    }  
    public WriteTxBuf(unsigned char x) {  
        data_txbuf = x;  
        toggle_count += TOGGLE_TABLE[WRITEBUF];  
    }  
    public ReadRxBuf(unsigned & x) {  
        // implementation of reading character from buffer  
        toggle_count += TOGGLE_TABLE[READBUF];  
    }  
};
```

**FIG. 5**



**FIG. 6**

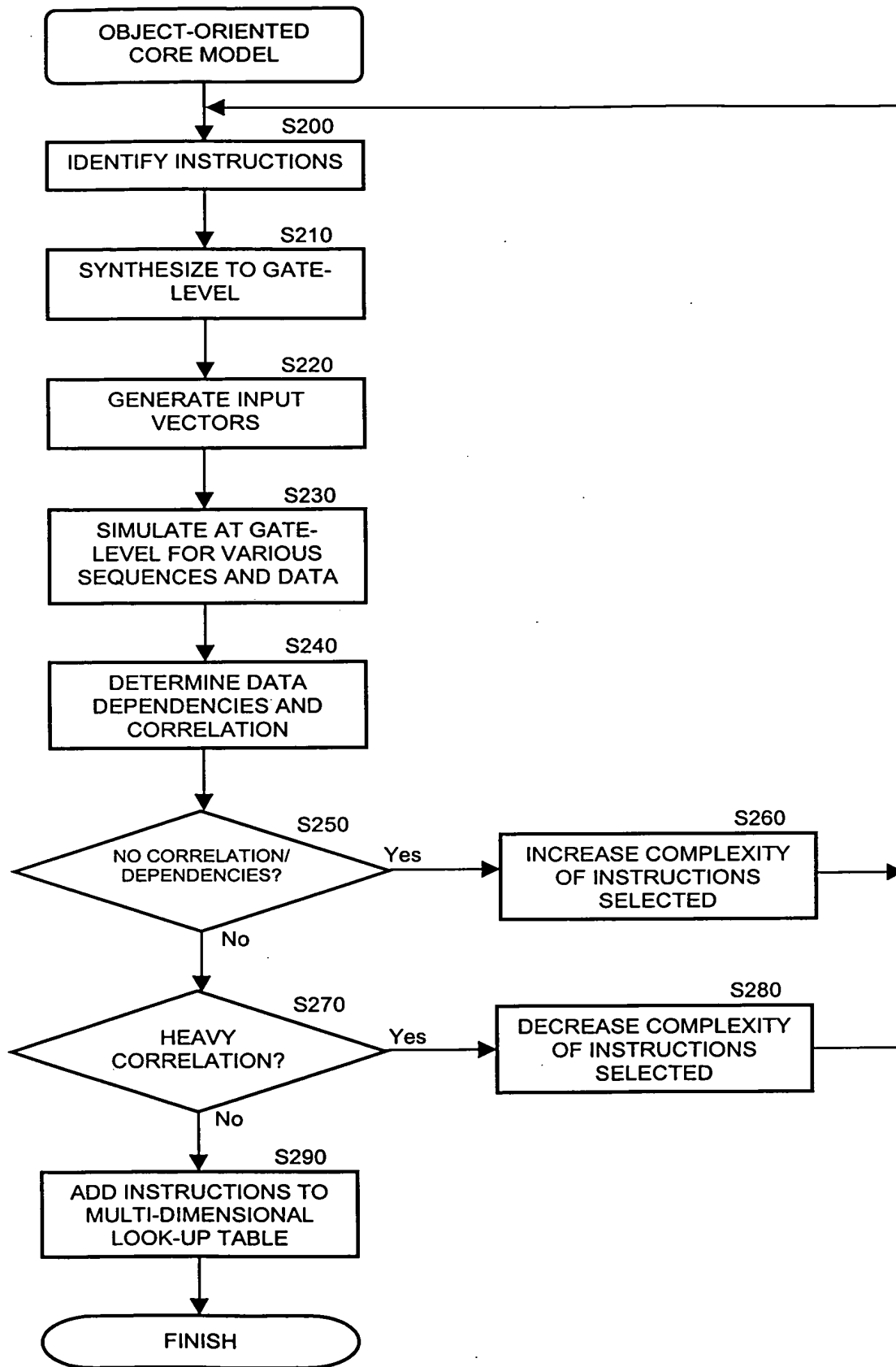
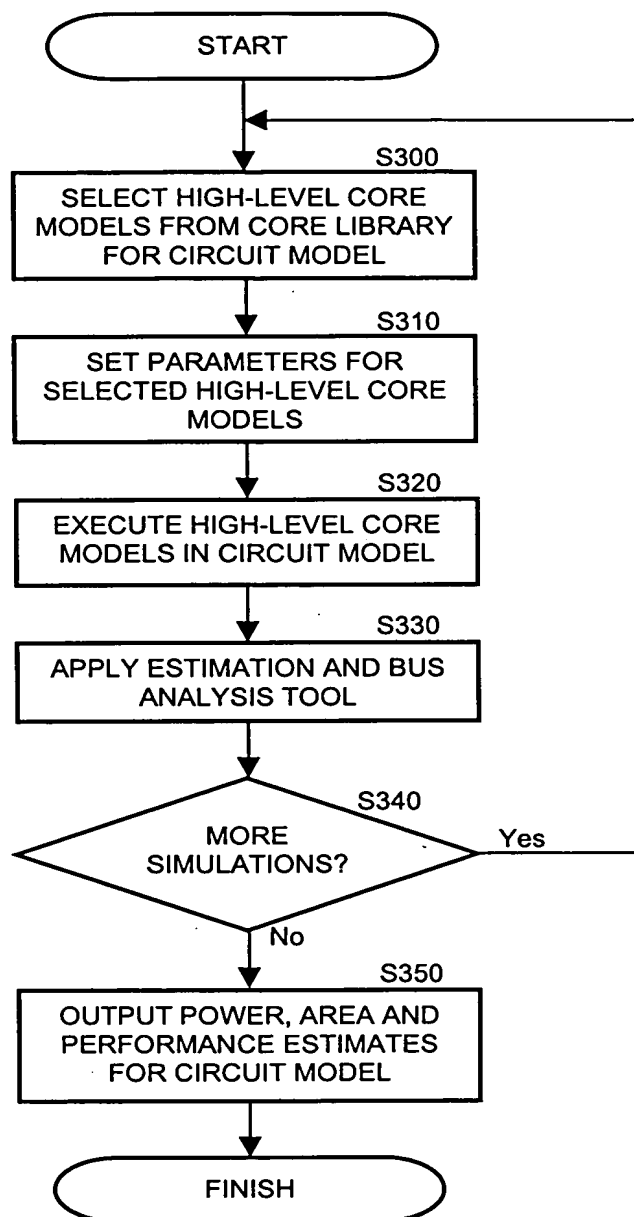
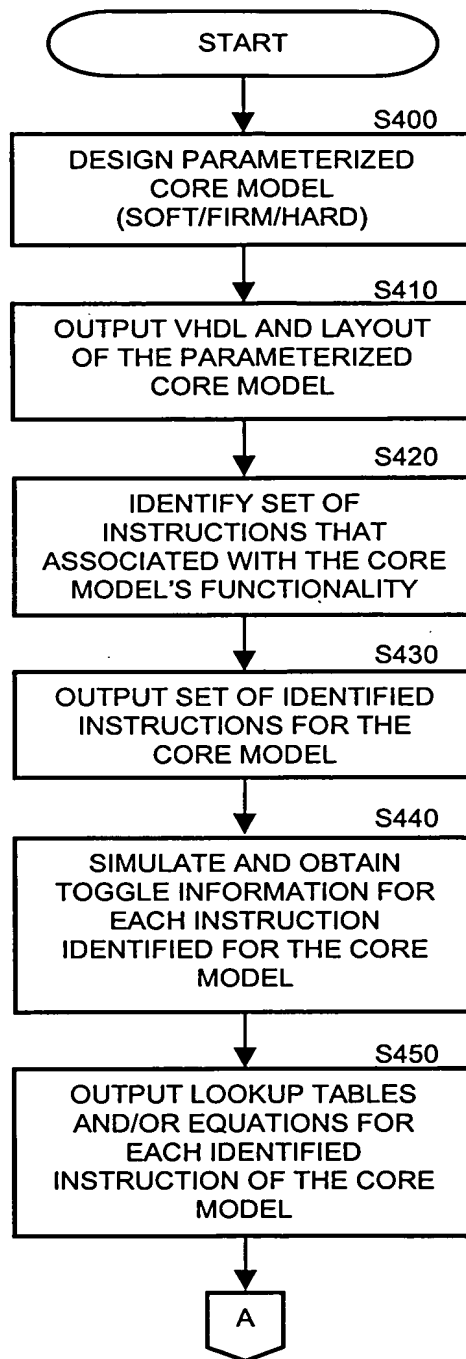


FIG. 7

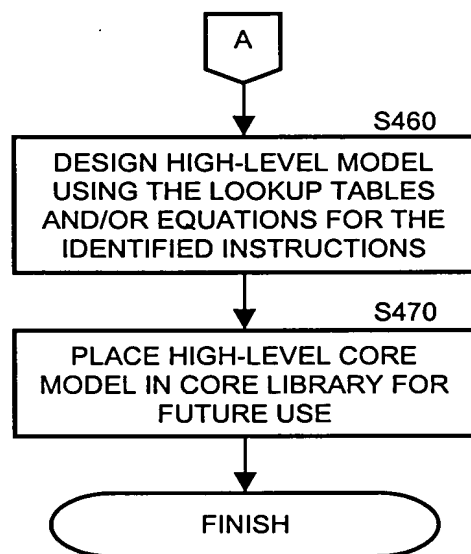


**FIG. 8**



**FIG. 9A**





**FIG. 9B**

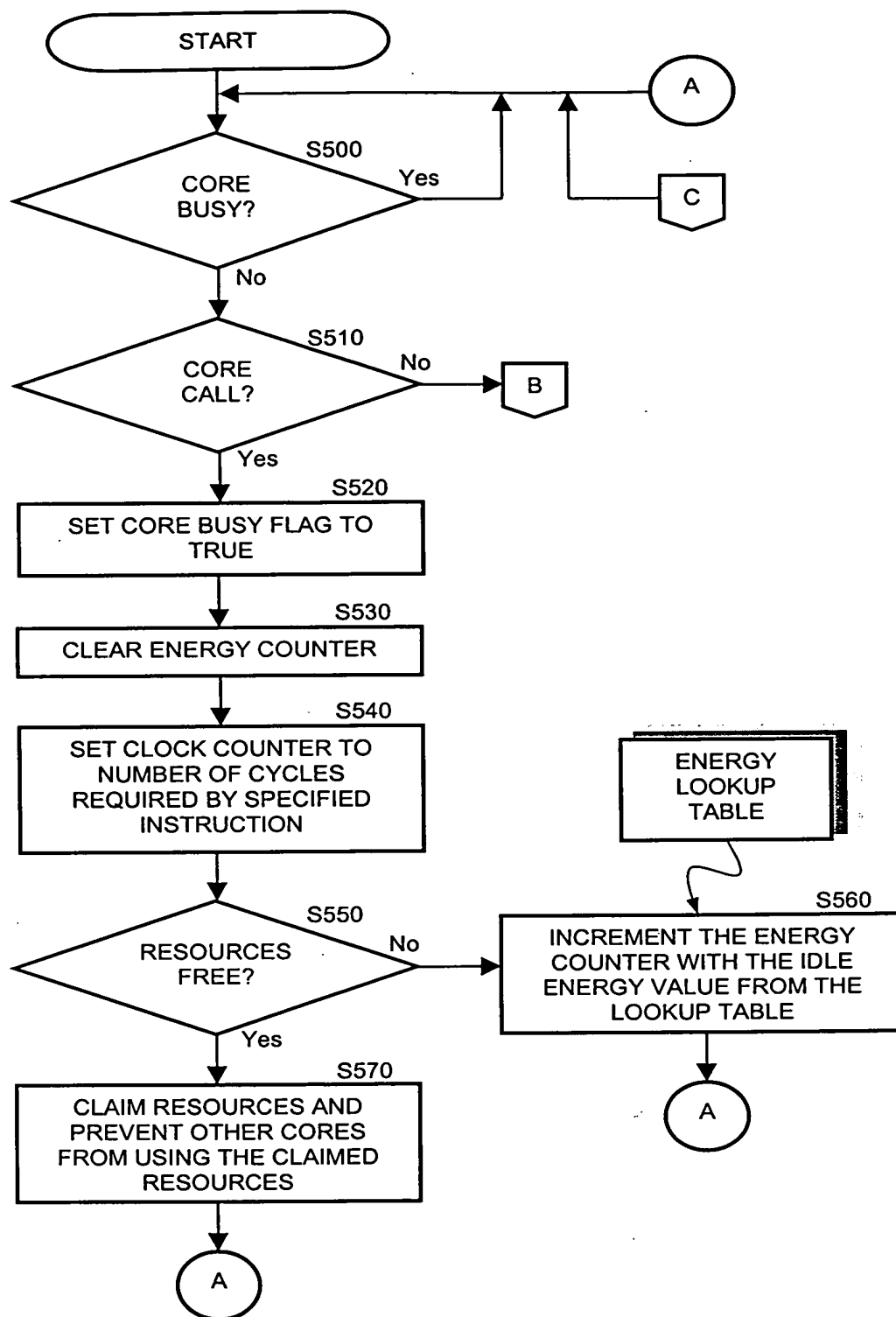
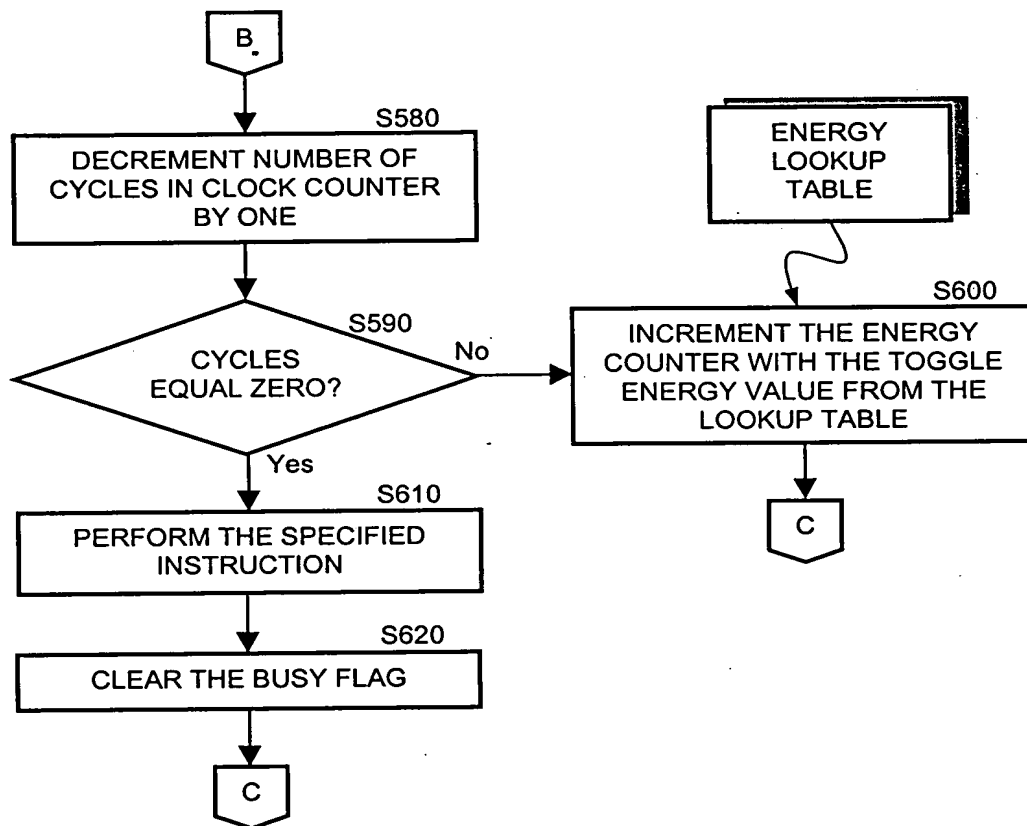
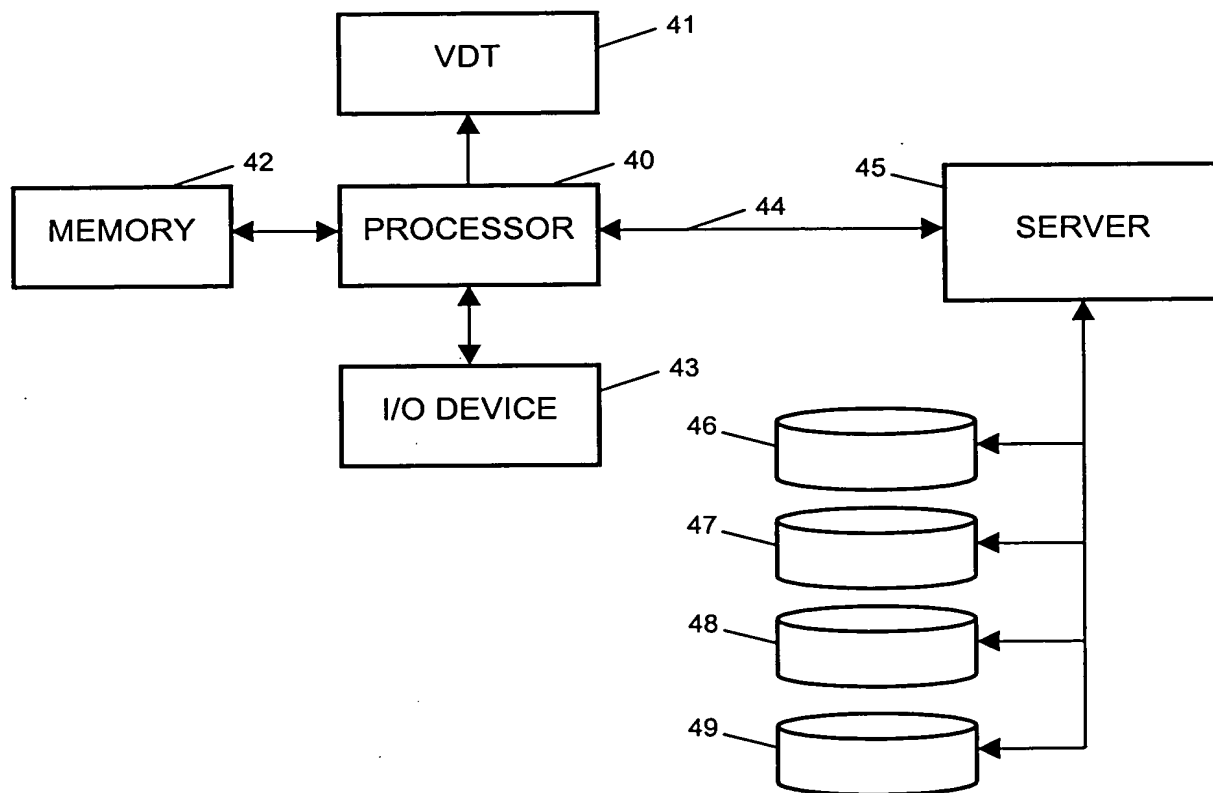


FIG. 10A



**FIG. 10B**



**FIG. 11**

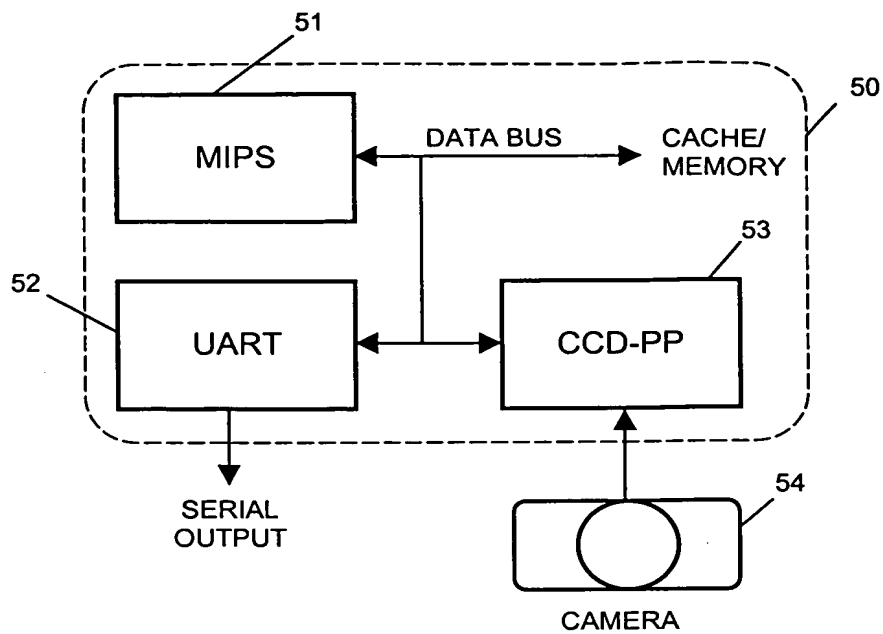


FIG. 12

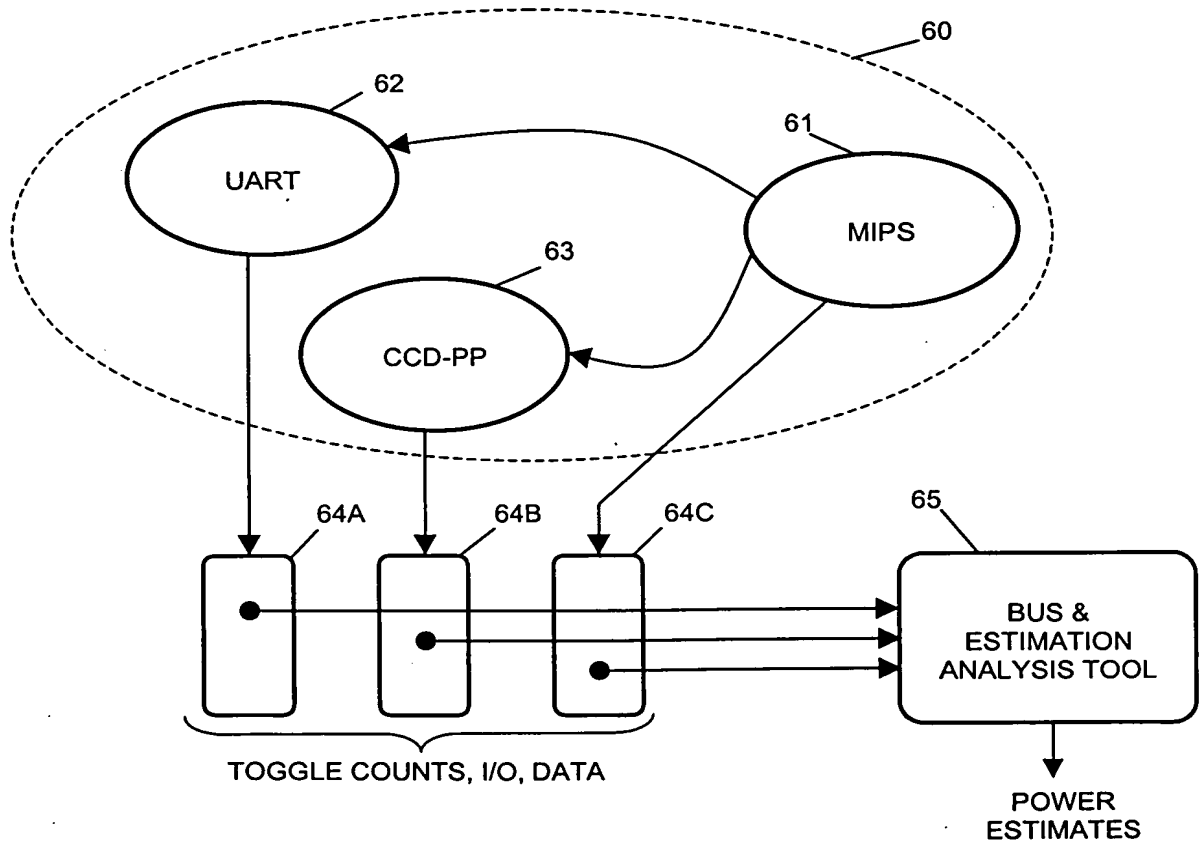


FIG. 13